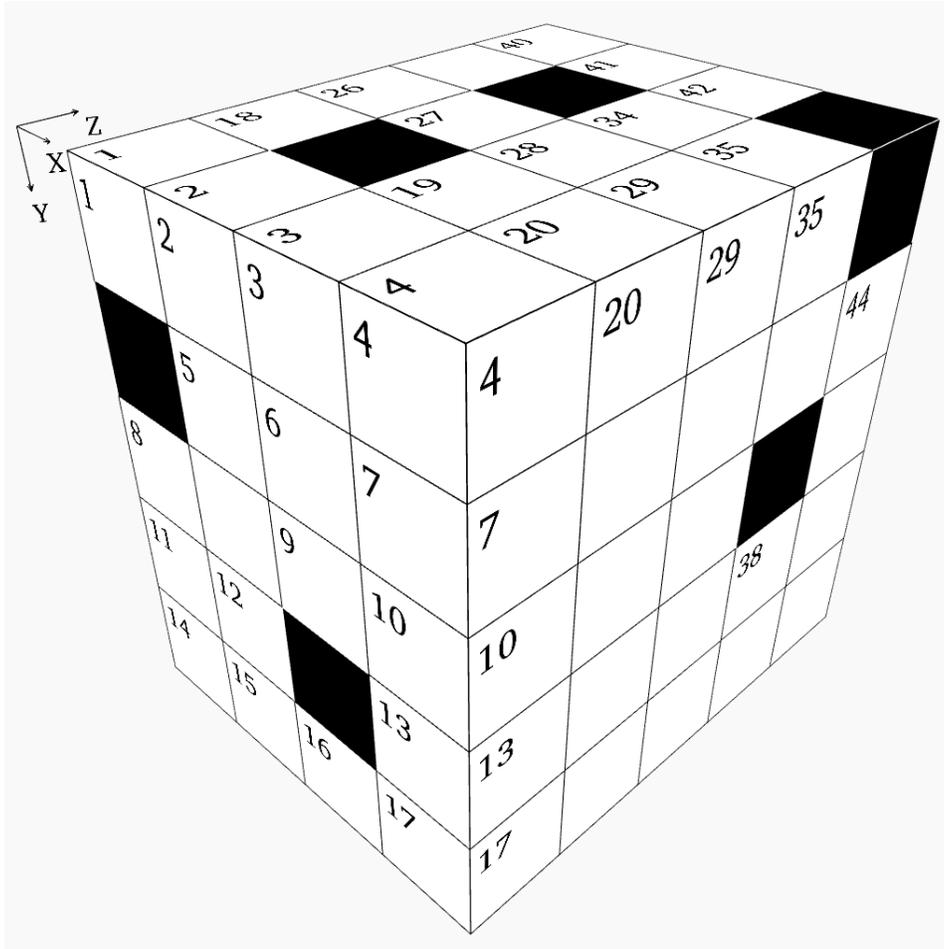


Box - Hard Puzzle #15



This puzzle is like a crossword, but with numbers. Each digit occupies a 3D block and can be a part of a "word" in the X,Y, and Z directions.

Rules:

1. "Words" may not start with a zero.
2. "Words" in the X direction read from left to right.
3. "Words" in the Y direction read from top to bottom.
4. "Words" in the Z direction read from front to back.
5. There is one unique solution which satisfies all the clues given below.
6. Some "words" may not have clues. They will be determined by the "words" which intersect them.

If we take the box pictured above and divide it into individual X-Y layers, we will get these planes:

1	2	3	4	18		19	20	26	27	28	29
	5	6	7	21				30			
8		9	10			22			31		
11	12		13	23	24			32			
14	15	16	17	25				33			

		34	35	40	41	42	
		36		43			44
37				45			
			38	46		47	
39				48			

X Direction

- 1 A prime number
- 5 A prime number
- 8 Y_{42} times X_{11}
- 11 X_{22} minus Y_{26}
- 14 Consecutive digits unordered
- 19 Z_{31} minus Y_3
- 21 Fifty-nine times a prime number
- 22 X_{23} divided by X_{34}
- 23 Ninety-three times a prime number
- 25 Twice a prime number
- 26 A prime number
- 30 A prime number
- 31 Mean of Z_{31} and Y_{37}
- 32 Mean of Y_{42} and X_{45}
- 33 A prime number
- 34 X_{36} minus Y_{38}
- 36 X_{19} reversed
- 37 Consecutive digits unordered
- 39 X_{26} minus Y_{37}
- 40 Z_{31} plus Y_8
- 43 Eight times a prime number
- 45 X_{22} minus X_{34}
- 46 Twenty-one times a prime number
- 48 Twenty-three times a prime number

Y Direction

- 2 Z_1 plus half of Y_{35}
- 3 Y_{37} minus Y_{18}
- 4 Last two digits are the same as last two digits of X_{23}
- 8 A prime number
- 18 Y_8 minus Y_{47}
- 19 Z_{16} plus X_1
- 20 Z_{17} plus X_{37}
- 23 X_{22} minus Y_{38}
- 24 Mean of X_{34} and Y_8
- 26 Mean of Y_{42} and Z_{37}
- 27 Last two digits are the same as last two digits of Z_{12}
- 28 Three times X_{36}
- 29 First two digits are the same as first two digits of Z_4
- 32 Same as X_{32}
- 34 X_{31} minus Y_{23}
- 35 X_{19} minus Z_{21}
- 37 Z_{21} plus Y_{34}
- 38 Z_{31} minus Y_{34}
- 40 Fifty-one times a prime number
- 41 Twice the result of Z_{13} plus X_{32}
- 42 X_{45} plus Y_{35}
- 44 X_{33} minus Z_5
- 47 Z_{11} divided by X_{40}

Z Direction

- 1 Sixty-one times a prime number
- 3 Nine times a prime number
- 4 Z_9 minus Y_{47}
- 5 Fourteen times Y_{26}
- 6 Four thousand nine hundred ninety-four less than Z_{15}
- 7 Fifty-two times a prime number
- 9 Five times a prime number
- 10 Y_{34} plus Y_{35}
- 11 Five thousand four hundred three less than Z_{13}
- 12 Thirteen times a prime number
- 13 A prime number
- 14 Thirty-three times a prime number
- 15 Sixty-four times a prime number
- 16 Eight times a prime number
- 17 Nineteen thousand seven hundred eighty-four more than Z_{14}
- 21 Y_{40} divided by X_{30}
- 31 Sixteen times X_{45}
- 37 Z_{15} divided by X_5

Solution:

2	2	5	1	9	█	8	9	7	6	2	1
█	9	5	3	5	9	5	9	1	4	9	9
1	7	1	6	█	█	9	3	█	6	4	3
2	2	█	2	4	9	2	9	5	9	█	9
7	6	8	9	8	0	3	8	9	9	6	7

0	█	5	3	7	6	7	█
█	█	9	8	6	0	8	8
6	4	5	█	4	0	█	9
4	█	█	4	4	1	3	7
6	9	7	5	9	2	2	3